

Ventilation for buildings - Performance testing of components/products for residential ventilation - Part 5: Cowls, assisted cowls and roof outlet terminal devices

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 13141-5:2020 sisaldab Euroopa standardi EN 13141-5:2020 ingliskeelset teksti.	This Estonian standard EVS-EN 13141-5:2020 consists of the English text of the European standard EN 13141-5:2020.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
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English Version

Ventilation for buildings - Performance testing of
components/products for residential ventilation - Part 5:
Cowls, assisted cowls and roof outlet terminal devices

Ventilation des bâtiments - Essais de performance des
composants/produits pour la ventilation des
logements - Partie 5 : Extracteurs statiques, extracteurs
statiques assistés et dispositifs de sortie en toiture

Lüftung von Gebäuden - Leistungsprüfung von
Bauteilen/Produkten für die Lüftung von Wohnungen -
Teil 5: Hauben und Dach-Fortluftdurchlässe

This European Standard was approved by CEN on 8 June 2020.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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European foreword

This document (EN 13141-5:2020) has been prepared by Technical Committee CEN/TC 156 “Ventilation for buildings”, the secretariat of which is held by BSI.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by April 2021, and conflicting national standards shall be withdrawn at the latest by April 2021.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 13141-5:2004.

In addition to a number of editorial revisions, the following main changes have been made with respect to EN 13141-5:2004:

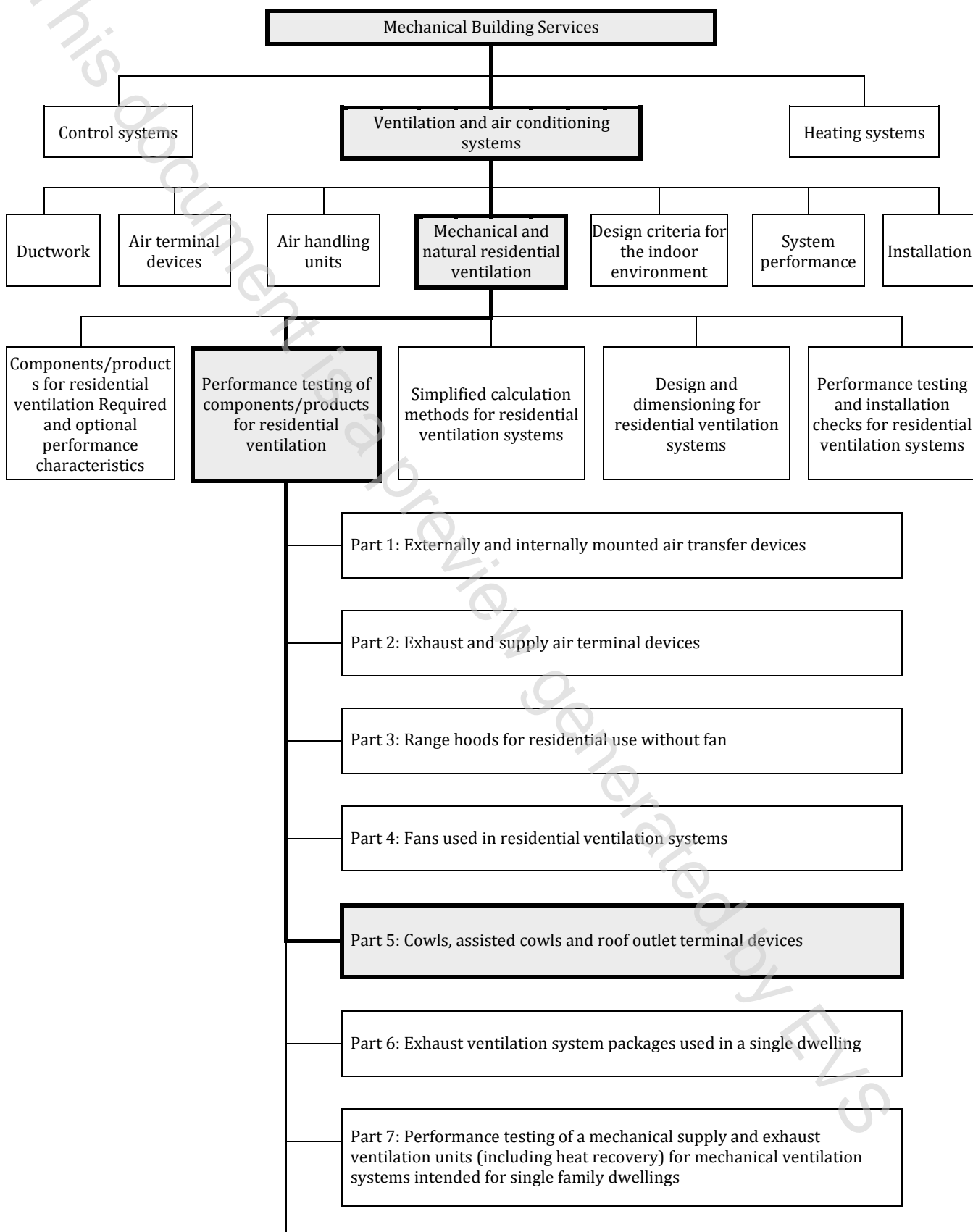
- modification of the title and scope to add assisted cowls;
- exclusion from the scope of roof exhaust fans which are tested according to EN 13141-4;
- reorganization of the clause concerning the performance testing of aerodynamic characteristics (now Clause 5) in order to have a more homogeneous organization and modification of all the figures to make them more understandable;
- modification of the subclause concerning test installation for aerodynamic characteristics (now 5.1), which includes the modification of all tests installation requirements as well as the distinction between requirements that apply to all the tests and those that apply only to the wind tunnel use;
- modification of the volume flow rate correction (see 5.2 concerning pressure drop);
- modification of the formula used to characterize the suction effect of a cowl (see 5.3.2 concerning the measurements and calculations);
- renaming of “Preliminary test” as “Least favourable horizontal wind approach angle for the suction effect” (see 5.3.3.1);
- replacement of “a wind of sufficient speed to give easily measurable pressure differences” by “a wind of 8 m/s” (see 5.3.3.1);
- removal of the two following measurements points: $V = 0,5 \text{ m/s}$ and $1,5 \text{ m/s}$ (see 5.3.3.2);
- more precise definition of the three series of measurements to carry out (i.e. $v_{\text{duct}} = 0 \text{ m/s}$, $v_{\text{duct}} = 4 \text{ m/s}$ and $0 \text{ m/s} < v_{\text{duct}} < 4 \text{ m/s}$) (see 5.3.3.3);
- for additional testing (e.g. acoustics and aerodynamic) for fan assisted cowls, reference to EN 13141-4 is replaced by reference to EN ISO 5801 and more developed information are given;
- addition of a test method for measuring the combined effect of natural wind and wind from the fan assisted cowl;
- addition of a detailed clause concerning the test report;
- review of the entire document in order to make it more accessible regarding the changes made.

A list of all parts in the EN 13141 series, published under the general title *Ventilation for buildings — Performance testing of components/products for residential ventilation* can be found on the CEN website.

According to the CEN-CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Introduction

The position of this document in the field of standards for the mechanical building services is shown in Figure 1.



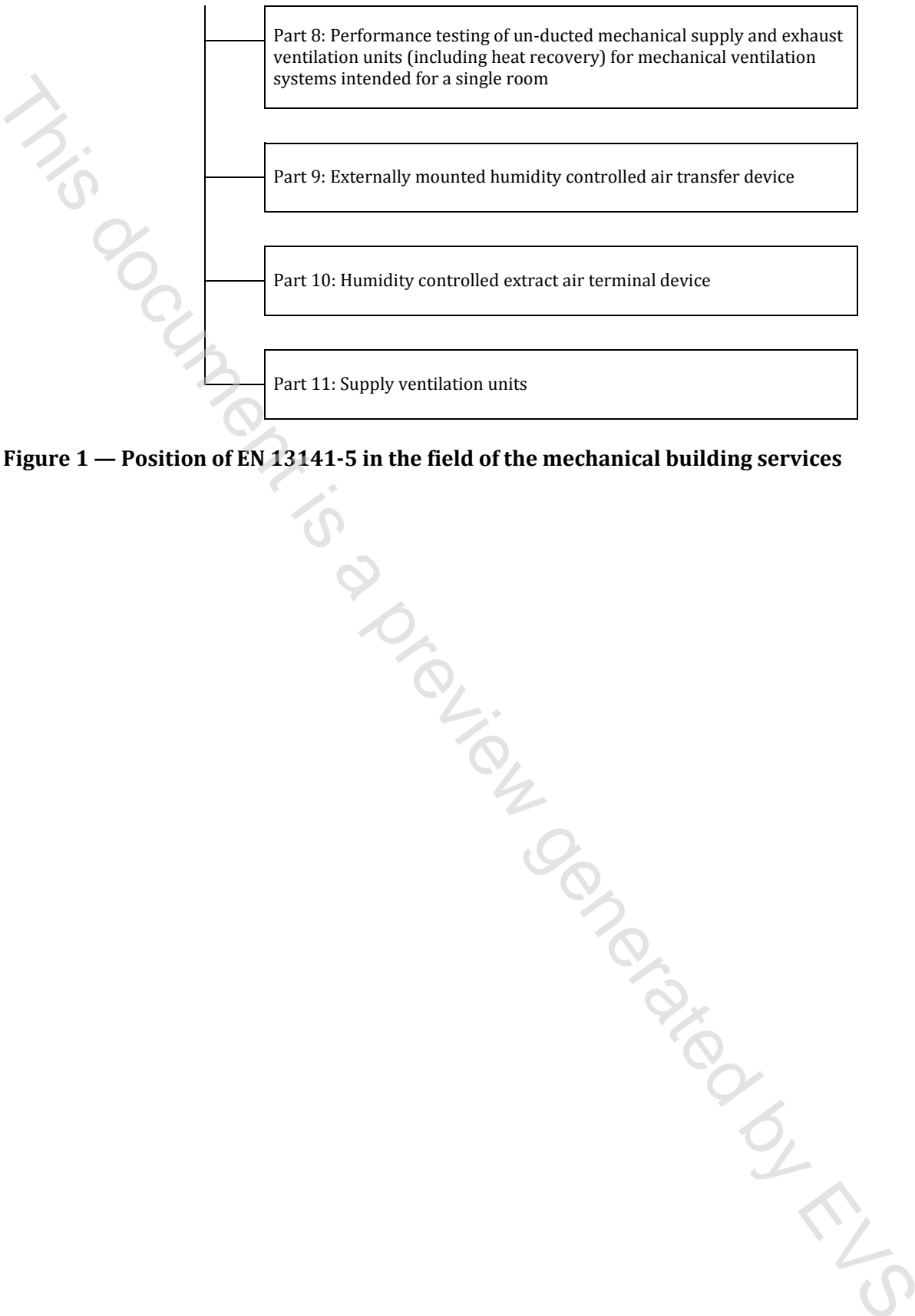


Figure 1 — Position of EN 13141-5 in the field of the mechanical building services

1 Scope

This document specifies methods for measuring:

- the aerodynamic characteristics of cowls, fan assisted cowls and roof outlets;
- the electrical and acoustic characteristics of fan assisted cowls.

This document is applicable to cowls, assisted cowls and roof outlets used in natural, hybrid or mechanical ventilation and that are meant to be fitted onto ducts which project above the roof surface.

This document does not apply to:

- assisted cowls assisted by a device other than a fan (e.g. injection assisted cowls);
- roof exhaust fans (see EN 13141-4).

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 12792, *Ventilation for buildings — Symbols, terminology and graphical symbols*

EN ISO 5136, *Acoustics — Determination of sound power radiated into a duct by fans and other air-moving devices — In-duct method (ISO 5136)*

EN ISO 5801:2017, *Fans — Performance testing using standardized airways (ISO 5801:2017)*

EN ISO 7235, *Acoustics — Laboratory measurement procedures for ducted silencers and air-terminal units — Insertion loss, flow noise and total pressure loss (ISO 7235)*

EN ISO/IEC 17025:2017, *General requirements for the competence of testing and calibration laboratories (ISO/IEC 17025:2017)*

ISO 13347-2, *Industrial fans — Determination of fan sound power levels under standardized laboratory conditions — Part 2: Reverberant room method*

ISO 13347-3, *Industrial fans — Determination of fan sound power levels under standardized laboratory conditions — Part 3: Enveloping surface methods*

ISO 13347-4, *Industrial fans — Determination of fan sound power levels under standardized laboratory conditions — Part 4: Sound intensity method*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 12792 and the following apply.

ISO and IEC maintain terminological databases for the use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO online browsing platform: available at <https://www.iso.org/obp>